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Remarks

This application has been reviewed in light of the Office Action of November 14, 2006. Claims 1-15 are pending. Claims 8-15 are withdrawn from consideration, and claims 1-7 are rejected. In response, new claims 16-20 are added; and the following remarks are submitted. Reconsideration of this application, as amended, is requested.

Restriction Requirement

Applicant affirms the election of the Group I claims, claims 1-7, with traverse.
Applicant traverses the restriction for two reasons.

(1) First, the restriction is based upon an unsupported assertion that the claimed article of Group I can be made by a materially different process, such as electroplating. Electroplating is within the scope of method claim 8, and therefore making the article by electroplating is not a "materially different process." Nothing in method claim 8 would eliminate electroplating as a method for producing the solar cell structure made by the process that is within the scope of claim 8. If the Examiner has any evidence or argument that the method of claim 8 could not be practiced by electroplating, it must be made of record.

(2) Second, the restriction is made pursuant to 35 USC 121. The claims must be shown to be "independent and distinct" to maintain the restriction, 35 USC 121, 37 CFR 1.141, MPEP 802. Since this requirement is statutory, it is not proper to interpret the statute in any other fashion. 35 USC 121 provides no basis for restriction on any other ground, such as search classifications or burden on the examiner. In this case, the claims are neither independent nor distinct.

The restriction asserts that the inventions are "distinct", but does not address the question of whether the inventions of Groups I and II are "independent", as required by the statute, the regulation, and the MPEP.

The inventions of Groups I and II are not "independent." The term "independent" is defined in MPEP 802.01:

"The term 'independent' (*i.e.*, not dependent) means that there is no disclosed relationship between the two or more subjects disclosed, that is, they are unconnected in design, operation, or effect..."

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As made quite clear in the specification, the subject matter of Groups I and II are not "independent." Specifically, the disclosed relationship is that of process of making and a product.

The inventions are also not distinct. MPEP 806.05(f) provides that the inventions are distinct if " ...the product as claimed can be made by another materially different process." The present argument of distinctness relies on this provision of the MPEP. For the reasons stated above in relation to point (1), the proposed process of making the product using electroplating is not outside the scope of claim 8.

For these reasons, the claims are not "independent and distinct." They are neither, and therefore must be examined in the same application, pursuant to the various statutes, regulations, and MPEP sections set forth herein.

Applicant asks that the Examiner reconsider and withdraw the restriction requirement as to Groups I and II. If the restriction is not withdrawn, the examiner must document a viable alternative process, or withdraw the requirement (MPEP 806.05(f)). "Document" means make documentary evidence of record to support the positions that (1) the product may be made by electroplating, and (2) that electroplating is not within the scope of claim 8.

Substantive Grounds of Rejection

Ground 1. Claims 1, 3-5, and 6 are rejected under 35 UC 102 as anticipated by Kressel U.S. Patent 4,070,206. Applicant traverses this ground of rejection.

The following principle of law applies to §102 rejections. MPEP 2131 provides: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the ... claim. The elements must be arranged as required by the claim..." [citations omitted] This is in accord with the decisions of the courts. Anticipation under §102 requires 'the presence in a single prior art disclosure of all elements of a claimed invention arranged as in that claim.' Carella v. Starlight Archery, 231 USPQ 644, 646 (Fed. Cir., 1986), quoting Panduit Corporation v. Dennison Manufacturing Corp., 227 USPQ 337, 350 (Fed. Cir., 1985).

Thus, identifying a single element of the claim, which is not disclosed in the reference is sufficient to overcome a §102 rejection.

Claim 1 recites in part:

"a shunt comprising a channel of an altered material..."

Kressel does not disclose any shunt "comprising a channel of an altered material." The explanation of the rejection does not even mention this limitation.

Claim 1 further recites in part:

"a shunt...

having an asymmetric current-voltage characteristic of passing a small current when voltage-biased in a forward direction parallel to the channel, and passing a large current when voltage-biased in a reverse direction parallel to the channel and opposite to the forward direction."

Kressel does not disclose this limitation.

The explanation of the rejection seeks to negate this limitation with reference to case authority dealing with newly discovered use or function being "inherent in the prior art." The Examiner's position can be sustained only if it can be shown that the recited limitation is inherent in the approach of Kressel.

MPEP 2112-2113 sets forth the law on inherency. Inherency is not to be taken lightly and not to be asserted unless there is good evidence to suggest that the asserted property or characteristic is necessarily present in the teachings of the prior art reference. The concept of inherency is not provided as a way to fill in the gaps in missing disclosure or teachings based upon speculation, unless the asserted property or characteristic may be shown to be necessarily present by objective evidence. Instead, "inherency" is used when every aspect of the disclosure of a reference and the claimed subject matter is otherwise exactly the same, then it may be inferred that some property or characteristic further recited in the claim must necessarily be present in the art reference. MPEP 2112 provides "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations

omitted). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)."

If these rejections are maintained, Applicant asks that the Examiner provide the basis in fact or technical reasoning that the recited claim limitation necessarily flows from the teachings of Kressel.

Claims 3-5 and 6 incorporate these same limitations, and are therefore also allowable.

Ground 2. Claim 2 is rejected under 35 USC 103 as unpatentable over Kressel in view of Merritt U.S. Patent 4,926,083. Applicant traverses this ground of rejection.

As a threshold issue, it is determined that Merritt is nonanalogous art. Stated alternatively, Merritt is not within the scope and content of the prior art that may be used in forming a §103 rejection. Its teachings are therefore not properly combined with the teachings of Kressel. To be analogous art and properly used in forming a §103 rejection, a reference must be concerned with the same problem as another reference and the claims which are being addressed. See, for example, Medtronic, Inc. v. Cardiac Pacemaker, Inc., 220 USPQ 97, 104 (Fed. Cir. 1983), stating: "Faced with a rate-limiting problem, one of ordinary skill in the art would look to the solutions of others faced with rate-limiting problems." In the present case, the inventor was concerned with a problem in solar cells, see the Background section of the Specification, the Summary of the Invention, the Detailed Description, and the claims. Merritt has nothing at all to do with solar cells. Merritt deals with acoustic charge transport devices, and therefore is not properly within the scope of the prior art. Further, Merritt does not deal at all with solar cell shunts and their structure. It is therefore not properly applied in rejecting the present claims. Merritt cannot be used in combination with Kressel to reject claims dealing with solar cells.

Even if Merritt is properly applied in an attempt to reject the present claims, no prima facie ground of rejection is stated.

MPEP 2142, under ESTABLISHING A PRIMA FACIE CASE OF OBVIOUSNESS, provides: "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable

expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. [citations omitted]. See MPEP para 2143-2143.03 for decisions pertinent to each of these criteria."

First requirement--there must be an objective basis for combining the teachings of the references.

The first of the requirements of MPEP 2142 is that "there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings." The present rejection is a §103 combination rejection. To reach a proper teaching of an article or process through a combination of references, there must be stated an objective motivation to combine the teachings of the references, not a hindsight rationalization in light of the disclosure of the specification being examined. MPEP 2142, 2143 and 2143.01. See also, for example, In re Fine, 5 USPQ2d 1596, 1598 (at headnote 1) (Fed.Cir. 1988), In re Laskowski, 10 USPQ2d 1397, 1398 (Fed.Cir. 1989), W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303, 311-313 (Fed. Cir., 1983), and Ex parte Levengood, 28 USPQ2d 1300 (Board of Appeals and Interferences, 1993); Ex parte Chicago Rawhide Manufacturing Co., 223 USPQ 351 (Board of Appeals 1984). As stated in In re Fine at 5 USPQ2d 1598:

"The PTO has the burden under §103 to establish a prima facie case of obviousness. [citation omitted] It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references."

And, at 5 USPQ2d 1600:

"One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention."

Following this authority, the MPEP states that the examiner must provide such an objective basis for combining the teachings of the applied prior art. In constructing such

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rejections, MPEP 2143.01 provides specific instructions as to what must be shown in order to extract specific teachings from the individual references:

"Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention when there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992)."

* * * * *

"The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)."

* * * * *

"A statement that modifications of the prior art to meet the claimed invention would have been 'well within the ordinary skill of the art at the time the claimed invention was made' because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993)."

Here, there is set forth no objective basis for combining the teachings of the references in the manner used by this rejection, and selecting the helpful portions from each reference while ignoring the unhelpful portions. An objective basis is one set forth in the art or which can be established by a declaration, not one that can be developed in light of the present disclosure.

In this case, Kressel and the present invention deal with solar cells. Merritt has absolutely no relation to solar cells.

If the rejection is maintained, Applicant asks that the Examiner set forth the objective basis found in the references themselves for combining the teachings of the references, and for adopting only the helpful teachings of each reference and disregarding the unhelpful teachings of the reference. Thus, as it stands now, the invention as a whole is not prima facie obvious over the combined teachings of the prior art.

Second requirement--there must be an expectation of success

The second of the requirements of MPEP 2142 is an expectation of success. There is no expectation of success...This requirement has not been addressed in the explanation of the rejection, and in any event more than Examiner's argument is required here.

As stated in MPEP 2142, "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. [citations omitted]."

This requirement has not been addressed in the explanation of the rejection, for good reason. There is no basis to argue that processing of the acoustic charge transport device of Merritt would have any expectation of success with the solar cell of Kressel.

Third requirement--the prior art must teach the claim limitations

The third of the requirements of MPEP 2142 is that "the prior art reference (or references when combined) must teach or suggest all the claim limitations." In this regard, the following principle of law applies to all §103 rejections. MPEP 2143.03 provides "To establish prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)." [emphasis added] That is, to have any expectation of rejecting the claims over a single reference or a combination of references, each limitation must be taught somewhere in the applied prior art. If limitations are not found in any of the applied prior art, the rejection cannot stand. In this case, the applied prior art references clearly do not arguably teach some limitations of the claims.

The limitations of claim 1 are incorporated into claim 2. Claim 1 recites in part:
"...a shunt comprising a channel of an altered material
extending between and at least partially through the two
semiconductor layers,"

Neither reference teaches a shunt made of an altered material that extends between and at least partially through the two semiconductor layers.

Claim 1 further recites in part:

“a shunt...

having an asymmetric current-voltage characteristic of passing a small current when voltage-biased in a forward direction parallel to the channel, and passing a large current when voltage-biased in a reverse direction parallel to the channel and opposite to the forward direction.”

Neither reference discloses this limitation. If it is argued that the approach of Merritt produces such as result, Applicant responds that Merritt does not disclose the conditions of voltage application, and therefore it cannot be known that proton bombardment in Merritt produces the recited result.

Claim 2 additionally recites in part:

“the altered material is a proton-irradiated altered material.”

Neither reference has such a teaching. The altered material referenced in claim 2 is the material recited in claim 1 as “a shunt comprising a channel of an altered material extending between and at least partially through the two semiconductor layers.” Merritt has no teaching of such an element.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Ground 3. Claim 7 is rejected under 35 USC 103 over Kressel in view of Solar Panels website. Applicant traverses this ground of rejection.

Claim 7 incorporates the limitations of claim 1. The limitations of claim 1 are not taught by Kressel for the reasons set forth in relation to the Ground 1 rejection, which are incorporated here.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

CONCLUSION

In view of the above, Applicant respectfully requests reconsideration of the Application and withdrawal of the outstanding objections and rejections. As a result of the amendments and remarks presented herein, Applicant respectfully submits that claims are not anticipated by nor rendered obvious by the cited art either alone or in combination and thus, are in condition for allowance. As the claims are not anticipated by nor rendered obvious in view of the applied art, Applicant requests allowance of all of the remaining claims in a timely manner. If the Examiner believes that prosecution of this Application could be expedited by a telephone conference, the Examiner is encouraged to contact the Applicant.

This response is filed with a one-month extension fee. The Commissioner is authorized to charge Deposit Account No. 50-1059 for this extension fee. It is believed that no other fees are due with the filing of this paper. In the even that Applicants are mistaken in their calculations, the Commissioner is hereby authorized to deduct any additional fees determined by the Patent Office to be due from the undersigned's Deposit Account No. 50-1059.

Applicant respectfully requests entry of the above amendment and allowance of the claims.

The Commissioner is hereby authorized to charge any additional fees and credit any overpayments to Deposit Account No. 50-1059.

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